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ABSTRACT

Questionnaires designed to determine the extent of computer usage in secondary schools in Texas and the level of commitment to this usage by teachers, principals, and campuses were mailed to 1,950 principals. Results based on the 1,191 30-item forms returned indicate that computer usage generally increases with campus size. Principals of schools that were using computers felt more strongly about the need for computer literacy for all high school graduates than principals of schools where computers were not used, with agreement positively related to district size. A similar trend was found in principals' reporting of their own level of computer literacy. While 62 percent of all schools reported computer use, the number of computers per campus was relatively small. Current usage emphasizes math and computer programming, however, other computer uses in instruction are increasing, with users reporting a strong tendency to purchase machine-ready software. Over 70 percent of all schools using computers for instruction had begun such use within the preceding 3 years. Cost is a primary inhibiting factor for computer use, and little campus-wide commitment currently exists for computer usage. The survey form used and 21 data tables are appended. (LMM)

EXTENT OF COMPUTER USAGE IN SECONDARY SCHOOLS: THE TEXAS STORY

by

John J. Beck, Jr.

Extent of Computer Usage in Secondary Schools: The Texas Story

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October, 1982

Abstract

The use of computers in Texas secondary schools is apparently well established in approximately sixty-two per cent of them. In spite of the decreasing cost of microcomputers over the last five years, however, a large percentage of schools still perceive cost to be the greatest inhibiting factor to computer use. While sixty-two per cent of all schools report computer use, the number of computers per campus remains relatively small, and the primary use of computers in instruction continues to be related to mathematics and computer programming.

A survey was made of 1,950 secondary school principals in Texas in order to determine the extent of computer usage in these schools and to determine the level of commitment to this usage by principals, teachers, and the campus.

The most significant findings of the study were that over seventy per cent of all schools using computers for instruction began such use within the last three years; one is the most common number of computers per campus; few principals have a working knowledge of computers; and little campus-wide commitment exists for computer usage.

Extent of Computer Usage in Secondary Schools: The Texas Story

John J. Beck, Jr., Ph.D.

The recent proliferation of microcomputers, the so-called personal computers, is a widely known and well-documented phenomenon of today's technology. A recent report (All About Microcomputers, Delran, NJ: DATAPRO RESEARCH CORPORATION, 1982) catalogued the features of 266 different models of microcomputers. The variety and focus of periodicals and books devoted to microcomputer technology and uses is readily observed at any newsstand. Textbook and educational materials vendors have begun a serious and large-scale effort in the production and marketing of microcomputer-related software. Leading advocates of the educational use of computers are beginning to focus on the future. Luehrmann ("Computer Literacy," The Computing Teacher, Vol. 9, March, 1982), for example, predicts that "Within three years, the average secondary school will have a computer laboratory or classroom with approximately 16 computers."

In order to determine whether or not reality with respect to computer usage in secondary schools is keeping pace with current and projected usage, an investiagtion was conducted into the current usage in Texas secondary schools. Since Texas is frequently listed as one of eight states judged to be a leading contributer to the development of computer education(Education USA, January 4, 1982), it was assumed that "the state of the art" in Texas would be representative of the entire nation.

Method and Organization of the Study

The sample for this study consisted of 1,950 secondary school principals in Texas. The names comprised the entire mailing list of the Texas Association of Secondary School Principals. While not every secondary principal in Texas is a member of this organization, the extent of membership among principals is so great that this sample of 1,950 was assumed to be representative of the entire group of state secondary principals.

A thirty-item questionnaire was designed and mailed to the sample in November of 1981. (See Appendix 1 for a reproduction of the questionnaire.) 1,191 completed questionnaires, representing 61.07 per cent of the total mailed, were returned.

Results and Implications

Since the sole purpose of the study was to determine the extent of current usage among Texas secondary schools, the primary data analysis consisted of a frequency tabulation of the returned questionnaires.

Background Information

The reported grade-level organization, campus enrollment and district enrollment revealed expected information.

Put Tables 1 and 2 about here

Notice that over half of the reporting schools(53.9 per cent) indicated a campus enrollment between 251 and 1,000. This data supports other data concerning campus size throughout the state. The campus enrollment data reveals an expected trend in computer usage.

In general, as campus size increases, so does computer usage. The plurality of non-using campuses, however, was reported among those campuses with enrollment between 251 and 500.

Data comparing computer usage to district enrollment was even more revealing. Whereas 44.2 per cent of those districts with enrollment greater than 10,000 indicated some level of computer usage, only 14.9 per cent of those districts with enrollment fewer than 1,000 reported such use.

Put Table 3 about here

When principals were asked about their level of commitment to computer literacy for all high school graduates, the general trend revealed was twofold. First, those principals of schools that were using computers felt more strongly about the need for computer literacy than did those principals of schools where computers were not used. Second, in general, the larger the district, the more likely the principal was to agree with the need for computer literacy for all graduates.

Put Tables 4 and 5 about here

A similar kind of trend was revealed when principals were asked to report their own level of computer literacy. While only 5.1 per cent of the principals of schools that were using computers reported little or no knowledge of computers and their use, 24.5 per cent of the principals of schools not using computers reported this lack of

knowledge. Similarly, the principals of larger schools reported a linearly increasing knowledge of computers as compared to the principals of the smaller schools. A distressing revelation was that only about one principal in five(22.6 per cent) reported a level of computer literacy high enough to make the principal a decision-maker or a prime mover with respect to computer use on his or her campus.

Analysis of the data related to whether or not computers were used on a principal's campus and, if used, whether for instructional or administrative purposes, was revealing. When this data were analyzed according to district size, they revealed that 67.3 per cent of the districts of fewer than 1,000 enrollment do not use computers in any fashion while only 13.0 per cent of the largest districts(enrollment greater than 10,000) reported no usage at the secondary level.

Put Tables 6 and 7 about here

Notice that even though cost was most often listed as the major reason for not having computers to use, regardless of district size, the strength of this reason weakened as district size increased. While 55.0 per cent of the principals of the smallest schools listed cost as the major prohibitor of computer purchases, only 37.2 per cent of the principals of the largest schools did so.

General Computer Information

Computer Systems in Use

It is widely known that the advent of microcomputers has greatly influenced the rate of growth of computer based education. In order to

determine the extend and pervasiveness of this growth, questions were asked which related to the kinds of computer systems currently in use.

Put Table 8 about here

Among the secondary school principals who reported using computers in their buildings, in excess of sixty per cent reported that microcomputers were used exclusively. Approximately nineteen per cent reported the exclusive use of remote terminals linked to a centralized computer, and nearly twenty-one per cent reported the use of a combination of remote terminals and microcomputers. When the data were stratified according to district size, it was found that microcomputers comprise over three-fourths of the inventory in the smallest schools while approximately one-half of the inventory in the largest districts is classified as microcomputers.

The Apple brand of microcomputer was found to be the most frequently used machine among the reporting schools with the Radio Shack TRS-80 brand a close second in popularity. Over seventy per cent of the reporting schools reported using one or the other of these two brands.

Put Table 9 about here

District size again was found to be a significant variable concerning brand of microcomputer used. The smaller districts were more likely to report the using of the Radio Shack TRS-80 while the larger districts were more likely to report the using of Apples.

Even though sixty-two per cent of Texas secondary schools reported the use of computers, the number of computers in use remains relatively small. Twenty-two per cent of the principals reported having only one microcomputer in their building, and almost fifty-seven per cent reported having three or fewer machines. The greatest number reported on a campus was thirty-two, but only approximately thirty-seven per cent reported eight or more microcomputers on their campuses.

Put Table 10 about here

As might be expected, the larger districts reported using more microcomputers than did the smaller districts. Whereas almost forty per cent of the smallest districts reported using but one machine per campus, only fourteen per cent of the largest districts reported such use. Similarly, while over thirty-six percent of the largest districts reported using more than four microcomputers per campus, only sixteen per cent of the smallest districts reported using more than four machines per campus.

Administrative Use of Computers

Put Table 11 about here

The use of computers for student scheduling was the most popular administrative use reported, with over fifty per cent of the responding principals indicating such use. The recording and reporting of letter grades(forty-two per cent) and attendance

accounting(forty-three per cent) were the next two most popular uses reported. Only fifteen per cent of the principals reported the use of computers for activity accounting.

According to the reported data, the larger districts were more likely to use computers to assist with student scheduling, the recording and printing of letter grades, and attendance accounting than were the smaller schools. Similarly, while fifteen per cent of the smalllest districts reported the use of computers in activity accounting, twenty-four per cent of the largest districts reported such use.

The use of computers for administrative purposes is well-established in many schools, and probably was the way computers were first introduced into schools. Over forty per cent of the respondents reported having used computers administratively for more than six years while twenty-four per cent have used them for from four to six years and thirty-five per cent for three or fewer years.

Put Table 12 about here

A comparison of years of use versus school district size revealed that while over seventy per cent of the smallest districts have used computers administratively for fewer than four years, slightly over twenty-eight per cent of the largest districts have used computers for administrative purposes for so short a time. Conversely, while over fifty per cent of the largest districts reported the administrative use of computers for more than six years, only less than nine per cent of the smallest districts have used computers administratively for

this length of time.

While data analysis related to the source of administrative software revealed that over forty-one per cent of the users purchase machine-ready software, a surprisingly large percentage reported that software is written locally. Over forty-eight per cent of the smallest districts reported writing administrative software locally, and over thirty-eight per cent of the largest districts reported local writing.

Put Table 13 about here

Instructional Use of Computers

Analysis of the survey data confirmed the popular belief that computer uses in instruction are increasing. Over eighty-two per cent of the principals who responded reported a trend showing increasing use while less than two per cent reported a decreasing trend. This reporting of an increasing trend was supported by data indicating the length of time computers have been used for instruction in the reporting districts. Over seventy-one percent of the sample reported that such use had been made for three or fewer years while less than nine per cent reported usage for more than six years.

Put Tables 14 and 15 about here

Again, the largest districts reported a longer history in the instructional use of computers. While over fifty-six per cent of the

largest districts reported instructional use of computers for fewer than four years, and over fifteen per cent of these districts reported usage for more than six years, the report of the smallest districts is an interesting counterpoint. Over ninety-two per cent of the smallest districts reported instructional usage for fewer than four years and and negligible percentage indicated usage for more than six years.

Questions were asked on the survey to determine which students have computers available to them for instruction. Over sixty per cent of the principals reported that the regular students in their buildings are the primary users.

Put Table 16 about here

Forty-eight per cent of the respondents reported the use of computers in gifted and talented programs, and thirty-three reported uses in special education or compensatory programs. Few noticeable differences were discernible according to district size. One difference is related to instructional uses for special or compensatory students. Over twenty-four per cent of the smallest districts reported such usage while just over six per cent of the largest districts reported similar usage.

Less than half of the teachers who use computers for instruction received their training in colleges or universities. Even though the number receiving their training from these sources was a plurality, other sources comprise the majority.

Put Table 17 about here

Taken together, three teacher training sources were indicated to be more popular than college or university training. These sources were in-service training by the district, in-service by the intermediate education service center, and self-learning by the teacher.

Instructional computer users reported a strong tendency to purchase machine-ready software as opposed to writing their own. An analysis of the returns indicated that over fifty-four per cent of the schools purchase machine-ready software while under thirty-eight per cent choose to write their own. Approximately three per cent reported modifying existing software to fit local needs.

Put Table 18 about here

In spite of the reported high level of usage(sixty-two per cent of all schools reported using computers), a discouraging finding was that the predominant courses of study in which computers are used continue to be mathematics and computer programming. Over sixty-three per cent of the respondents reported using computers in these two courses while only ten per cent reported computer use in science classes, eight per cent in reading classes, seven per cent in English classes, and but four per cent in social studies classes.

Cost and Curriculum Compatibility

In order to determine whether or not schools were supporting

computer usage financially once the initial purchase was made, several questions related to cost and curriculum ware asked. The design of the research was such that trends in these kinds of data were assumed to be of more value than current determinations.

Put Table 19 about here

Analysis of the data related to the cost of operating computers revealed that almost eight per cent of the reporting schools indicated that the cost was about as budgeted. A significantly greater number of schools(seventeen per cent) reported that the costs were higher than budgeted as compared to the number that reported a cost lower than budgeted(two per cent).

Over forty-eight per cent of the reporting schools indicated that computer usage was selected and designed to insure compatibility with existing curricula. A surprisingly large number(over twenty-one per cent) reported that computer usage and curriculum compatibility had not been examined. Over twelve per cent reported that the curriculum had been modified to insure compatibility and over eighteen per cent reported that new curriculums had been created in which to use computers.

Put Tables 20 and 21 about here

As depicted in Table 21, very little campus-wide commitment to computer usage was found. Over fifty-two per cent of the respondents indicated that the predominant pattern was departmental usage of

computers. Over thirty-four per cent of the principals reported that teachers use computers by personal choice, and only six and one-half per cent reported any kind of campus-wide commitment to the use of computers in instruction.

Conclusions and Recommendations

The use of computers in Texas secondary schools is apparently well established in approximately sixty-two per cent of them. In spite of the decreasing cost of microcomputers over the last five years, however, a large percentage of schools still perceive cost to be the greatest inhibiting factor to computer usage.

While sixty-two per cent of all schools report computer use, the number of computers per campus remains relatively small, and the primary use of computers in instruction continues to be related to Math and computer programming.

The most significant finding of the study was that over seventy per cent of all schools using computers for instruction began such use within the last three years. This statistic bodes well for the future. As more schools begin using computers, their level of sophistication in instructional applications should increase.

The reported lack of campus-wide commitment to computer usage and the lack of pre-service training for teachers are the source of three major recommendations. First, instruction in the use of technology as a curriculum support system should become part of the training for every pre-service teacher and administrator; second, campus-level leadership should be given to insure that computer technology is implemented as a curriculum support system; and, third, campus-level

leadership should be given to implement computer technology support systems throughout the curriculum rather than simply in mathematics and computer programming.

APPENDIX I

COMPUTERS IN SECONDARY EDUCATION IN TEXAS

I. BACKGROUND INFORMATION

1. Grades on your campus?

_____a. 7-12
_____b. 9-12
_____c. 10-12
_____d. 7-9
_____e. 6-8
_____f. other (specify)_____

2. Enrollment on your campus?

_____a. 100 or fewer
_____b. 101-250
_____c. 201-500
_____d. 501-1000
_____e. 1001-2000
_____f. 2001 or greater

3. Enrollment in your district?

_____a. 1000 or fewer
_____b. 1001-5000
_____c. 5001-10,000
_____d. 10,001 or greater

4. Education Service Center Region to which your district belongs?

_____

5. Computer literacy is that minimal level of knowledge necessary to be informed about what computers can and cannot do and to be able to make informed decisions concerning their use.

Respond to the statement, "All High School graduates should be computer literate," by checking one choice below.

_____a. Strongly agree
_____b. Agree
_____c. Neither agree nor disagree
_____d. Disagree
_____e. Strongly disagree

6. Principal's computer literacy level?

_____a. Little or no knowledge of computers and their uses.
_____b. Somewhat informed, but have never used computers.
_____c. Have used computers, but could not teach with or about them.
_____d. Have studied and used computers, and can make decisions about them.
_____e. Use computers, and am a prime mover in their use on my campus.

7. Computer uses on my campus (check all appropriate choices)

_____a. Instructional (computer assisted or managed instruction)
_____b. Administrative (activity accounting, attendance, mark reporting, scheduling, etc.)
_____c. Computers not used on my campus.

IF YOU CHECKED A AND/OR B, SKIP ITEM 8 AND GO TO ITEM 9.
IF YOU CHECKED C, GO TO ITEM 8.

8. Reason(s) for not using computers (check all appropriate choices)

_____a. Never considered their use.
_____b. No qualified personnel.
_____c. Too costly.
_____d. No justifiable need.
_____e. Request turned down by higher authority.
_____f. other (specify)_____

IF YOU CHECKED ITEM 8, YOU HAVE COMPLETED THE SURVEY. THANK YOU FOR YOUR ASSISTANCE. PLEASE RETURN THE SURVEY TO:

TASSP/SWT SURVEY
DEPT. OF EDUCATION
SWTSU
SAN MARCOS, TX 78666

TURN SURVEY

II. GENERAL COMPUTER INFORMATION

9. What kind of computer systems are used on your campus?

_____a. Microcomputers
_____b. Remote terminals connected to a centralized computer.
_____c. Combination of microcomputers and remote terminals.

IF YOU CHECKED A, ANSWER ITEMS 10-12, SKIP 13-14, AND GO TO III.
IF YOU CHECKED B SKIP ITEMS 10-12, ANSWER 13-14, AND GO TO III.
IF YOU CHECKED C, ANSWER ITEMS 10-14, AND GO TO III.

10. Number of microcomputers on your campus?

_____

11. Brand of microcomputers on your campus? (check all appropriate choices)

_____a. Apple
_____b. Radio Shack
_____c. Commodore Pet
_____d. Compucolor
_____e. Texas Instruments
_____f. other (specify)_____

12. Who owns the microcomputers?

_____a. District owns.
_____b. Education Service Center owns and we lease.
_____c. other (specify)_____

13. Number of remote terminals on campus?

_____

14. Location of computer to which terminals are tied?

_____a. Campus
_____b. District
_____c. Education Service Center
_____d. Business or Industry
_____e. other (specify)_____

OVER AND CONTINUE

III. ADMINISTRATIVE USES OF COMPUTERS (ANSWER THIS SECTION ONLY IF YOU USE COMPUTERS FOR ADMINISTRATIVE FUNCTIONS)

15. Administrative uses of computers on your campus? (check all appropriate choices)

_____a. Scheduling
_____b. Letter grade
_____c. Attendance
_____d. Activity Accounting
_____e. other (specify)_____

16. How long have computers been used for administrative functions on your campus?

_____a. Fewer than 3 Years.
_____b. 4-6 years
_____c. More than 6 years.

17. Primary source of software and programs for administrative functions?

_____a. Write our own.
_____b. Purchase or get machine ready software.
_____c. Modify existing software.
_____d. other (specify)_____

IV. INSTRUCTIONAL USES OF COMPUTERS (ANSWER THIS SECTION ONLY IF COMPUTERS ARE USED FOR INSTRUCTION ON YOUR CAMPUS)

18. How long have computers been used for instruction on you campus?

_____a. Fewer than 3 years.
_____b. 4-6 years.
_____c. More than 6 years.

19. Trend of computer uses in instruction on your campus?

_____a. Increasing
_____b. Decreasing
_____c. Steady-State

20. Students who receive computer-assisted instruction? (check all appropriate choices)

_____a. Gifted and talented
_____b. Regular
_____c. Remedial
_____d. Special Education
_____e. other (specify)_____

21. Primary source of teacher training for those who use computers in instruction?

____a. College or University
____b. In-Service by district
____c. In-Service by Service Center
____d. Self-Taught
____e. other (specify)_____

22 Primary source of Instructional Computer materials (software, courseware)?

____a. Write our own.
____b. Purchase or get machine ready software.
____c. Modify existing software.
____e other (specify)_____

23. Does your school offer a course in computer literacy?

____Yes
____No

If "Yes" continue with 24,
If "No" skip 24-26, and cont.

24. Is the computer literacy course required?

____Yes
____no

25. Grade level at which computer literacy course is offered? (circle one)

07 08 09 10 11 12

26. Length of computer literacy?

____a. Less than a semester.
____b. Semester
____c. Year

27. Cost of operating computer systems for instruction on campus (including computers, operations, software, maintenance, supplies, materials)

____a. Higher than budgeted and have increased budget.
____b. Higher than budgeted and have decreased use.
____c. About as budgeted
____d. Lower than budgeted and have increased use.
____e. Lower than budgeted and have decreased budget.

28. Compatibility of computer use for instruction with existing curriculum?

____a. Curriculum modified to insure compatibility.
____b. Computer use selected and designed to insure compatibility.
____c. New curriculum created to use computers.
____d. Computer use and curriculum compatibility has not been examined.

29. Campus Commitment to computer assisted instruction?

____a. Individual teachers use computers by personal choice.
____b. Some departments use computers but no campus wide commitment to them exists.
____c. Efforts are made to have all departments use computers as necessary.
____d. A campus-wide commitment to the use of computers in instruction is evident.

THANK YOU FOR YOUR ASSISTANCE. PLEASE RETURN THE SURVEY TO:

TASSP/SWT SURVEY
DEPARTMENT OF EDUCATIO
SOUTHWEST TEXAS STATE UNIVERSITY

SAN MARCOS, TX 78666

30. Subjects in which computers are used.

COMPUTER USAGE BY SUBJECT

SUBJECT	TOTAL ENROLLMENT	NO. STUDENTS WHO USE COMPUTERS	MODE SEE CODE BELOW	USE SEE CODE BELOW	FREQUEI SEE COI BELOW
Computer Science					
Mathematics					
Science					
Social Studies					
English					
Reading					

Mode (enter one or more numbers from choices below)

1. Drill and Practice-Student responds in rather quick fashion, sometime requiring off-line computations, under a kind of "flash card" format.
2. Tutorial-resembles programmed texts in that paragraph material, interspersed questions, and branching are present.
3. Simulation-models phenomena of a complex nature in which random events are introduced.
4. Problem Solving-eliminates complex calculations to foster understanding of principles and rules.
5. Games-individual or group activities aimed at building confidence and skills.
6. Instructional Management-teacher record keeping, testing, test construction, scoring, etc.
7. Counseling-Guidance Information Service, etc.

Use (enter one or more numbers from choices below)

1. To learn a skill.
2. To develop an attitude.
3. Enrichment
4. Remediation
5. Independent study

Frequency (enter one number from choices below to indicate frequency of use for those students who use computers)

1. Daily
2. Weekly
3. Less than weekly.

31. Have any cost effectiveness studies of computers use for instruction been attempted on your campus?

____Yes
____No

IF "YES" PLEASE GIVE YOUR NAME AND ADDRESS FOR POSSIBLE FOLLOW UP:

_____
_____
_____

Table 1

CAMPUS ORGANIZATION			
GRADES	TOTAL (%)	USERS (%)	NON-USERS (%)
7-12	10.4	5.9	17.5
9-12	39.4	46.3	28.5
10-12	4.2	6.1	1.2
7-9	6.1	7.1	4.1
6-8	22.4	20.9	24.8
OTHER	17.5	13.7	23.8

Table 2

CAMPUS ENROLLMENT			
ENROLLMENT	TOTAL (%)	USERS (%)	NON-USERS (%)
100 or fewer	3.4	1.4	6.8
101-250	16.0	8.3	28.4
251-500	25.6	17.4	38.8
501-1000	28.3	32.1	21.8
1001-2000	19.5	29.5	3.4
2001 or greater	7.2	11.5	0.7

Table 3

DISTRICT ENROLLMENT			
ENROLLMENT	TOTAL (%)	USERS (%)	NON-USERS (%)
1000 or fewer	28.0	14.9	49.3
1001-5000	33.3	31.1	36.9
5001-10000	7.3	9.7	3.2
10001 or greater	31.3	44.2	10.6

Table 4

ALL GRADUATES SHOULD BE COMPUTER LITERATE							
CHOICE	TOTAL (%)	N-USERS (%)	USERS (%)	<1000 (%)	<5000 (%)	<10000 (%)	>10000 (%)
STRONGLY AGREE	20.9	15.8	24.2	17.1	19.6	12.2	28.0
AGREE	43.1	41.1	44.3	43.8	39.5	51.4	44.9
NEUTRAL	21.2	26.6	17.8	24.0	22.8	20.3	16.6
DISAGREE	13.5	14.8	12.7	14.7	16.4	14.9	9.5
STRONGLY DISAGREE	1.3	1.7	0.9	0.3	1.7	1.4	0.9

Table 5

PRINCIPALS' COMPUTER LITERACY LEVEL							
LEVEL	TOTAL (%)	N-USERS (%)	USERS (%)	<1000 (%)	<5000 (%)	<10000 (%)	>10000 (%)
LITTLE OR NO KNOWLEDGE OF COMPUTERS AND THEIR USES	12.6	24.5	5.1	20.6	12.0	9.2	5.8
SOMEWHAT INFORMED, BUT HAVE NEVER USED COMPUTERS	41.5	48.5	36.9	42.2	49.3	38.2	32.5
HAVE USED COMPUTERS, BUT COULD NOT TEACH WITH OR ABOUT THEM	23.2	17.5	26.9	17.6	20.1	25.0	31.9
HAVE STUDIED AND USED COMPUTERS, AND CAN MAKE DECISIONS ABOUT THEM	16.9	9.0	22.0	16.2	13.5	14.5	22.7
USE COMPUTERS, AND AM A PRIME MOVER IN THEIR USE ON MY CAMPUS	5.7	0.5	9.1	3.4	5.2	13.2	7.1

Table 6

COMPUTER USES ON CAMPUS					
USES	TOTAL (%)	<1000* (%)	<5000 (%)	<10000 (%)	>10000 (%)
INSTRUCTIONAL	47.9	27.6	45.0	57.9	70.0
ADMINISTRATIVE	39.2	11.1	29.8	73.7	67.9
NOT USED	37.9	67.3	42.6	17.1	13.0

Table 7

REASONS FOR NOT USING COMPUTERS					
REASONS	TOTAL (%)	<1000* (%)	<5000 (%)	<10000 (%)	>10000 (%)
NEVER CONSIDERED	16.5	16.0	20.0	15.4	9.3
NO QUALIFIED PERSONNEL	27.2	36.5	22.0	30.8	13.9
TOO COSTLY	46.4	55.0	42.7	46.2	37.2
NO JUSTIFIABLE NEED	20.1	23.0	21.3	15.4	18.6
REQUEST TURNED DOWN,	12.6	10.5	13.3	15.4	27.9
OTHER	17.0	15.5	20.7	23.1	23.3

Table 8

COMPUTER SYSTEMS IN USE					
SYSTEM	TOTAL (%)	<1000* (%)	<5000 (%)	<10000 (%)	>10000 (%)
MICROCOMPUTERS	60.2	78.5	68.5	51.7	50.9
TIME SHARE TERMINALS	19.2	14.0	18.5	28.3	18.3
COMBINATION	20.7	7.5	13.0	18.3	30.8

*DISTRICT ENROLLMENT

Table 9

MICROCOMPUTER BRANDS IN USE					
BRAND	TOTAL (%)	<1000* (%)	<5000 (%)	<10000 (%)	>10000 (%)
APPLE	36.8	35.0	32.5	34.3	43.1
RADIO SHACK	34.1	44.3	35.0	22.9	36.1
COMMODORE PET	11.9	6.1	15.3	15.7	11.1
OTHERS	8.7	10.3	7.3	5.8	11.9

Table 10

MICROCOMPUTERS PER CAMPUS					
NUMBER	TOTAL (%)	<1000* (%)	<5000 (%)	<10000 (%)	>10000 (%)
1	22.4	39.7	24.5	31.3	14.4
2	19.6	26.0	16.5	18.8	19.0
3	14.5	13.7	15.8	6.3	15.5
4	13.6	4.1	14.4	15.6	14.9
5	10.2	5.5	11.5	6.3	11.5
6	8.5	6.8	8.6	9.4	9.2
7	4.1	2.7	3.6	3.1	5.2
8	4.6	1.4	2.2	---	8.6
more than 8	2.5	0.1	2.9	9.2	1.7

Table 11

CAMPUS ADMINISTRATIVE USES					
USES	TOTAL (%)	<1000* (%)	<5000 (%)	<10000 (%)	>10000 (%)
SCHEDULING	50.5	22.2	77.8	89.3	68.4
LETTER GRADES	42.2	35.5	58.0	62.5	59.4
ATTENDANCE	43.0	26.7	58.9	66.1	60.1
ACTIVITY ACCOUNTING	15.4	22.2	16.1	16.1	24.0
OTHER	15.9	6.0	22.3	21.4	15.6

*DISTRICT ENROLLMENT

Table 12

ADMINISTRATIVE YEARS OF USE					
YEARS	TOTAL (%)	<1000* (%)	<5000 (%)	<10000 (%)	>10000 (%)
FEWER THAN 4	34.9	71.1	38.4	31.5	28.2
4-6	23.9	20.0	26.8	25.9	21.2
MORE THAN 6	40.7	8.9	33.0	42.6	50.6

Table 13

SOURCE OF ADMINISTRATIVE SOFTWARE					
SOURCE	TOTAL (%)	<1000* (%)	<5000 (%)	<10000 (%)	>10000 (%)
WRITE OWN	33.1	48.9	23.0	22.4	38.6
PURCHASE MACHINE READY	41.7	35.6	43.0	57.1	37.7
MODIFY	8.8	--	8.0	14.3	9.1
OTHER	16.2	2.4	25.0	6.1	14.5

Table 14

INSTRUCTIONAL YEARS OF USE					
YEARS	TOTAL (%)	<1000 (%)	<5000 (%)	<10000 (%)	>10000 (%)
FEWER THAN 4	71.3	92.5	82.6	74.5	56.6
4-6	19.7	7.5	13.7	17.6	27.9
MORE THAN 6	8.8	--	3.1	7.8	15.6

Table 15

TREND IN INSTRUCTION					
TREND	TOTAL (%)	<1000* (%)	<5000 (%)	<10000 (%)	>10000 (%)
INCREASING	82.1	76.8	83.2	88.5	80.9
DECREASING	1.7	2.4	1.2	--	2.0
STEADY STATE	16.0	18.3	14.9	11.5	17.1

Table 16

STUDENTS WHO RECEIVE CAI					
CATEGORY	TOTAL (%)	<1000 (%)	<5000 (%)	<10000 (%)	<10000 (%)
GIFTED/TALENTED	48.1	43.3	41.4	48.1	56.9
REGULAR	60.4	64.9	57.1	51.9	65.6
REMEDIAL	33.2	34.0	29.6	31.2	36.8
SPECIAL EDUCATION	15.9	24.7	16.3	9.1	6.6
OTHER	7.1	12.4	8.9	1.3	6.6

Table 17

SOURCE OF TEACHER TRAINING					
SOURCE	TOTAL (%)	>1000 (%)	>5000 (%)	>10000 (%)	>10000 (%)
COLLEGE OR UNIVERSITY	45.8	42.7	47.3	40.8	46.7
IN-SERVICE BY DISTRICT	29.8	14.6	23.4	40.8	36.7
IN-SERVICE BY ESC	10.4	20.7	15.0	10.2	4.2
SELF-TAUGHT	12.1	20.7	13.8	8.2	9.2
OTHER	1.9	1.2	0.6	--	3.3

Table 18

SOURCE OF CAI SOFTWARE					
SOURCE	TOTAL (%)	<1000 (%)	<5000 (%)	<10000 (%)	>10000 (%)
WRITE OWN	37.6	40.5	40.7	34.0	35.8
OBTAIN MACHINE READY	54.2	46.8	51.9	61.7	55.8
MODIFY EXISTING	3.1	3.8	3.1	4.3	3.1
OTHER	0.2	--	4.3	--	4.9

Table 19

COST OF OPERATING COMPUTERS					
CATEGORY	TOTAL (%)	<1000 (%)	<5000 (%)	<10000 (%)	>10000 (%)
HIGHER THAN BUDGETED AND HAVE INCREASED BUDGET	17.2	10.5	17.4	14.0	20.9
HIGHER THAN BUDGETED AND HAVE DECREASED USE	1.5	--	3.2	--	0.5
ABOUT AS BUDGETED	79.5	84.2	78.1	86.0	76.7
LOWER THAN BUDGETED AND HAVE INCREASED USE	1.6	5.3	1.3	--	1.0
LOWER THAN BUDGETED AND HAVE DECREASED BUDGET	0.4	--	--	--	1.0

Table 20

COMPATIBILITY WITH CURRICULUM					
CATEGORY	TOTAL (%)	<1000 (%)	<5000 (%)	<10000 (%)	>10000 (%)
CURRICULUM MODIFIED TO INSURE COMPATIBILITY	12.5	7.7	16.4	12.2	11.7
COMPUTER USE SELECTED AND DESIGNED TO INSURE	48.1	35.9	47.4	49.0	52.9
NEW CURRICULUM CREATED TO USE COMPUTERS	18.3	23.1	17.1	12.2	19.7
COMPUTER USE AND CURRICULUM COMPATIBILITY HAS NOT BEEN EXAMINED	21.1	33.3	19.1	26.5	15.7

Table 21

CAMPUS COMMITMENT TO CAI					
LEVEL	TOTAL (%)	<1000 (%)	<5000 (%)	<10000 (%)	>10000 (%)
TEACHERS USE COMPUTERS BY PERSONAL CHOICE	34.7	42.3	35.1	28.6	33.6
SOME DEPTS USE COMPUTERS BUT NO CAMPUS COMMITMENT	52.2	39.4	55.2	59.2	52.5
EFFORTS MADE FOR DEPTS TO USE AS NECESSARY	6.7	8.5	5.2	8.2	6.7
CAMPUS-WIDE COMMITMENT TO USE OF COMPUTERS IN INSTRUCTION IS EVIDENT	6.5	9.9	4.5	4.1	7.2